

## ABSTRACT OF THE DISCLOSURE

In a mixer of a converter, a bipolar transistor is connected between the base of a bipolar transistor and a positive power-supply node within a driving circuit, as a temperature characteristic compensating circuit.

- 5 When the ambient temperature of the driving circuit rises, collector current of the transistor is increased due to the temperature characteristic of the transistor. This lowers the drain voltage of a high electron mobility transistor. However, collector current of the transistor within the temperature characteristic compensating circuit is also increased,
- 10 increasing the voltage at a point, so that the increase in the collector current of the transistor is suppressed. This results in a stabilized drain voltage of the transistor. Therefore, the low noise down-converter can supply a stable voltage to a transistor performing frequency conversion, without any effect from the change in the ambient temperature.